I doubt if we can use these Maximum Contaminant levels. If we desire to exempt an aquifer where the (TDS) of injected fluid is less than formation fluids it would take a very complete analysis of the formation water. There are 129 different constituents that are not normally found on standard analyses

7/6/83

BOB:

ATTACHED ARE THE MAXIMUM CONTAMINANT LEVELS (MCL) FOR DRINKING WATER AND A LIST OF THE 129 PRIORITY POLLUTANTS. TO DEMONSTRATE THAT THE QUALITY OF WATER BEING INJECTED IS EQUAL TO OR BETTER THAN THE FORMATION WATER, WE SHOULD AT LEAST EXAMINE THE PARAMETERS MARKED IN YELLOW AMONG THE MCL'S AND ALL "APPROPRIATE" PARAMETERS AMONG THE 129 PRIORITY POLLUTANTS. SOME QUESTIONS YOU SHOULD CONSIDER ARE:

1. WHAT OTHER PARAMETERS SHOULD BE CONSIDERED (eg pH, BORON, IRON, MANGANESE)?
2. WHICH OF THE 129 PRIORITY POLLUTANTS ARE APPROPRIATE OR INAPPROPRIATE WITH RESPECT TO THE CHEMICAL QUALITY OF PRODUCED WATER?
3. IS IT CHEAPER TO RUN ALL 129 PRIORITY POLLUTANTS OR TO BE SELECTIVE?

GIVE ME A CALL WHEN YOU'VE HAD A CHANCE TO REVIEW THIS.

NATE LAU

Subpart B–Maximum Contaminant Levels

Section 141.11 Maximum contaminant levels for inorganic chemicals.

(a) The maximum contaminant level for nitrate is applicable to both community water systems and non-community water systems. The levels for the other inorganic chemicals apply only to community water systems. Compliance with maximum contaminant levels for inorganic chemicals is calculated pursuant to § 141.23.

(b) The following are the maximum contaminant levels for inorganic chemicals other than fluoride:

Contaminant	*Level, milligrams per liter*
Arsenic	0.05
Barium	1.
Cadmium	0.010
Chromium	0.05
Lead	0.05
Mercury	0.002
Nitrate (as N)	10.
Selenium	0.01
Silver	0.05

(c) When the annual average of the maximum daily air temperatures for the location in which the community water system is situated is the following, the maximum contaminant levels for fluoride are:

Temperature Degrees Fahrenheit	Degrees Celsius	Level, milligrams per liter
53.7 and below	12.0 and below	2.4
53.8 to 58.3	12.1 to 14.6	2.2
58.4 to 63.8	14.7 to 17.6	2.0
63.9 to 70.6	17.7 to 21.4	1.8
70.7 to 79.2	21.5 to 26.2	1.6
79.3 to 90.5	26.3 to 32.5	1.4

Section 141.12 Maximum contaminant levels for organic chemicals.

The following are the maximum contaminant levels for organic chemicals. They apply only to community water systems. Compliance with maximum contaminant levels for organic chemicals is calculated pursuant to § 141.24.

	Level, milligrams per liter
(a) Chlorinated hydrocarbons:	
Endrin (1, 2, 3, 4, 10, 10-hexachloro-6,7-epoxy-1, 4,	0.0002

4a, 5, 6, 7, 8, 8a-octahydro-1, 4-endo, endo-5, 8 - dimethano naphthalene).	
Lindane (1, 2, 3, 4, 5, 6-hexachlorocyclohexane, gamma isomer).	0.004
Methoxychlor (1, 1, 1-Trichloroethane). 2, 2 - bis [p-methoxyphenyl].	0.1
Toxaphene ($C_{10}H_{10}Cl_8$-Technical chlorinated camphene, 67-69 percent chlorine).	0.005
(b) Chlorophenoxys:	
2,4 - D, (2, 4-Dichlorophenoxyacetic acid).	0.1
2, 4, 5-TP Silvex (2, 4, 5-Trichlorophenoxypropionic acid).	0.01

Section 141.13 Maximum contaminant levels for turbidity.

The maximum contaminant levels for turbidity are applicable to both community water systems and non-community water systems using surface water sources in whole or in part. The maximum contaminant levels for turbidity in drinking water, measured at a representative entry point (s) to the distribution system, are:

(a) One turbidity unit (TU), as determined by a monthly average pursuant to § 141.22, except that five or fewer turbidity units may be allowed if the supplier of water can demonstrate to the State that the higher turbidity does not do any of the following:

(1) Interfere with disinfection;

(2) Prevent maintenance of an effective disinfectant agent throughout the distribution system; or

(3) Interfere with microbiological determinations.

(b) Five turbidity units based on an average for two consecutive days pursuant to § 141.22.

Section 141.14 Maximum microbiological contaminant levels.

The maximum contaminant levels for coliform bacteria, applicable to community water systems and non-community water systems, are as follows:

(a) When the membrane filter technique pursuant to § 141.21(a) is used, the number of coliform bacteria shall not exceed any of the following:

(1) One per 100 milliliters as the arithmetic mean of all samples examined per month pursuant to § 141.21 (b) or (c);

(2) Four per 100 milliliters in more than one sample when less than 20 are examined per month; or

(3) Four per 100 milliliters in more than five percent of the samples when 20 or more are examined per month.

(b) (1) When the fermentation tube method and 10 milliliter standard portions pursuant to § 141.21(a) are used, coliform bacteria shall not be present in any of the following:

(i) more than 10 percent of the portions in any month pursuant to § 141.21 (b) or (c);

(ii) three or more portions in more than one sample when less than 20

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rocyclohexane, 0.004

hane). 2, 2 - bis 0.1

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samples are examined per month; or

(iii) three or more portions in more than five percent of the samples when 20 or more samples are examined per month.

(2) When the fermentation tube method and 100 milliliter standard portions pursuant to § 141.21(a) are used, coliform bacteria shall not be present in any of the following:

(i) more than 60 percent of the portions in any month pursuant to § 141.21 (b) or (c);

(ii) five portions in more than one sample when less than five samples are examined per month; or

(iii) five portions in more than 20 percent of the samples when five or more samples are examined per month.

(c) For community or non-community systems that are required to sample at a rate of less than 4 per month, compliance with paragraphs (a), (b) (1), or (b) (2) of this section shall be based upon sampling during a 3 month period, except that, at the discretion of the State, compliance may be based upon sampling during a one-month period.

Section 141.15 Maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity in community water systems.

The following are the maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity:

(a) Combined radium-226 and radium-228—5 pCi/1.

(b) Gross alpha particle activity (including radium-226 but excluding radon and uranium)—15 pCi/1.

Section 141.16 Maximum contaminant levels for beta particle and photon radioactivity from man-made radionuclides in community water systems

(a) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.

(b) Except for the radionuclides listed in Table A, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents shall be calculated on the basis of a 2 liter per day drinking water intake using the 168 hour data listed in "*Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure,*" NBS Handbook 69 as amended August 1963, U.S. Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 millirem/year.

TABLE A.—*Average annual concentrations assumed to produce a total body or organ dose of 4 mrem/yr*

Radionuclide	Critical organ	pCi per liter
Tritium	Total body	20,000
Strontium-90	Bone marrow	8